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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/653,782	09/01/2000	Paul R. Marshall	PHB 34,386	5639

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EXAMINER

CHOW, CHARLES CHIANG

ART UNIT	PAPER NUMBER
2685	8

DATE MAILED: 12/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/653,782

Applicant(s)

MARSHALL ET AL.

Examiner

Charles Chow

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 8-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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**Office Action for
Applicant's Amendment
Received on 5/20/2003**

1. Regarding applicant's amendment for canceling claims 6-7, adding new claims 8-11, based upon the no teachings for the two stage carrier detection (applicant's remark, page 4, 5th paragraph), the two stage carrier detection is not specified in any claim, and the technique for carrier detection is well-known.

Regarding the no teachings for a receiver circuit, a signal strength indicator circuit, the signal quality indicator, the microprocessor controlling the battery power for de-energizing receiving circuit, based on the quality indicator, primary Besharat has shown in the last office and repeated in below.

Regarding the microprocessor controlling of the battery power for de-energizing receiver based on both the determination of the presence of the carrier RSSI and the quality false rate, for maintaining energizing for a first period of time until quality decision is made, the microprocessor to de-energize receiver when no carrier presence without quality determination, the metering unit and encoder coupled to transmitter, the ground of rejection has been changed to include Gardner et al. (US 6,058,289).

Regarding the microprocessor controlling of the battery power for de-energizing receiver based on both the determination of the presence of the carrier and the quality false rate, for maintaining energizing for a first period of time until quality decision is made, the microprocessor to de-energize receiver when no carrier presence without quality determination, the metering unit and encoder coupled to transmitter, Gardner-'289 teaches the

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reducing of the power consumption of a mobile unit (title, col. 1, lines 6-10). Gardner teaches the processor for controlling the signal quality for the mobile unit based on the bit error rate BER quality and presence of the carrier from RSSI for maintaining energizing (as shown in col. 3, line 64 to col. 4, line 14; col. 11, line 65 to col. 12, line 7; col. 12, lines 35-53).

Gardner teaches the Ph-quality indication (col. 9, lines 40-53), the idle timer and wake timer (col. 13, lines 20-28). Gardner teaches the processor for controlling of the periodically deactivating receiver for a predetermined period for conserving battery power (col. 14, lines 46-67), the quality threshold (col. 14, lines 26-38), therefore, to deactivate receiver when weight RSSI falls (col. 12, lines 1-7). Gardner teaches the transmitter of the mobile unit for communicating with base station (above), and encoding MAC layer protocol information (col. 8, line 65 to col. 9, line 18). Gardner teaches the improved power supply control without sacrificing bandwidth with efficiency (col. 3, lines 31-67).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Besharat et al. (US 6,219,540 B1) in view of Ichikawa et al. (US 4,506,386), and further in view of Gardner et al. (6,058,289).

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Regarding **claim 1**, Besharat et al. ("Besharat") teaches a method of operating a receiver (104 for signal from transmitter 902, col. 2, lines 35-45, abstract, figure in cover page).

Besharat teaches the energizing the receiver, detecting the presence of a carrier signal (quality detector 154 for detecting out-of-range, in-range, signal for controlling the power to receiver 104, quality indicator 154, Fig. 1, abstract, col. 6, lines 19-41; col. 12, lines 1-8; the presence of acceptable transmission, col. 7, lines 36-38).

Besharat teaches the de-energizing the receiver if the carrier signal is not detected (the out-of-range detection, causing suspending of power supply to receiver 104, abstract; the absence of acceptable transmission, to generate out or range signal, col. 7, lines 38-42; col. 9, lines 34-36; col. 11, lines 18-20; the out-of-range detection and disable power using power control means 156 in col. 2, line 63 to col. 3, line 17). Besharat discloses the loss of signal is out-of-range (col. 9, lines 1-5 and col. 10, lines 16-19), as the carrier is not detected.

Besharat teaches the maintaining energisation of the receiver if the carrier signal is detected (the maintaining power supply to receiver 104 to enable in-range detection signal transmission). Besharat also teaches the in-range detection, to stop timer OOR 138, and to enable power supply to receiver 104 (col. 2, line 6 to col. 3, line 17).

Besharat does not clearly teach the detecting, decoding, the decodable signal, and the de-energizing the receiver if the signal is not decodable.

Ichikawa teaches the detecting, decoding, the decodable signal, and the de-energizing the

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receiver if the signal is not decodable. Ichikawa teaches a battery saving circuit of a portable radio communication apparatus (abstract, col. 1, lines 6-8). Ichikawa teaches the decoding of the preamble code, if preamble code is not detected, disconnecting the power to the receiver (abstract). Ichikawa teaches the maintaining of the power supply to the receiver after the preamble code is detected (abstract; counted error in col. 5, lines 24-34). Ichikawa shows the preamble signal in Fig. 1A, the decoder 4 in Fig. 2, 3, and the power controller 7 in Fig. 3. Ichikawa considers a reliable battery saving (col. 1, lines 25-27) to improving the battery saving efficiency (col. 1, lines 49-52). By including Ichikawa's technique to Besharat above, with the efficient battery power saving, the system could be upgraded of having a more reliable battery power supply by efficient battery power saving from Ichikawa. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Besharat above, and to include Ichikawa's efficient battery power saving with preamble decoding, such that the system could be efficient on saving the battery power.

Besharat and Ichikawa do not clearly teach the microprocessor controlling of the battery power for de-energizing receiver based on both the determination of the presence of the carrier and the quality false rate, for maintaining energizing for a first period of time until quality decision is made, the microprocessor to de-energize receiver when no carrier presence without quality determination, the metering unit and encoder coupled to transmitter, Gardner et al. ("Gardner") teaches the reducing of the power consumption of a mobile unit (title, col. 1, lines 6-10). Gardner teaches the processor for controlling the signal quality for the mobile unit based on the bit error rate BER quality and presence of the carrier from RSSI

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indicating for maintaining energizing (as shown in col. 3, line 64 to col. 4, line 14; col. 11, line 65 to col. 12, line 7; col. 12, lines 35-53). Gardner teaches the Ph-quality indication (col. 9, lines 40-53), the idle timer and wake timer (col. 13, lines 20-28). Gardner teaches the processor for controlling of the periodically deactivating receiver for a predetermined period for conserving battery power (col. 14, lines 46-67), the quality threshold (col. 14, lines 26-38), therefore, to deactivate receiver when weighted RSSI falls (col. 12, lines 1-7). Gardner teaches the transmitter of the mobile unit for communicating with base station (above), and encoding MAC layer protocol information (col. 8, line 65 to col. 9, line 18). Gardner teaches the improved power supply control without sacrificing bandwidth with efficiency (col. 3, lines 31-67), such that the system can efficiently controlling the battery power. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Besharat and to include Gardner's battery power controlling based on the RSSI and quality indicator BER, and time period for de-energizing battery power, such that the system could efficiently controlling the battery power.

Regarding **claim 2**, Besharat has shown above for the detecting of the presence of a carrier which is in-range (col. 4, line 66 to col. 2, line 7) for the in-range signal is the detected acceptable signal (col. 7, lines 20-26).

Regarding **claim 3**, Ichikawa has shown above for determining if a signal (preamble code) is decodable, and using the error count to measure the signal quality.

Regarding **claim 4**, Besharat discloses a communications system comprising a primary station having transmitter 902 for transmitting a signal and at least one secondary station 100 having a receiver 104 for receiving signals from primary station (col. 2, lines 35-45, Fig. 9).

Besharat discloses the receiver comprising receiving means (antenna 102, signal quality detector 154, processor 106, Fig. 1) for detecting quality.

Besharat has shown above the power control means 156 (figure in cover page) for de-energising power supply to receiver if loss of signal due to the detected out-of-range.

Regarding **claim 5**, Besharat teaches the means for determining RSSI by quality detector 154 (col. 4, line 62 to col. 5, line 1) having the quality detector 154 coupled to receiver 104, as shown in figure in cover page.

Regarding **claim 8**, Besharat teaches a battery power radio device 100 (abstract, Fig. 1), having battery 116, a receiver circuit (104, abstract) operable to produce a received signal over radio channel (abstract). Besharat teaches a demodulator, decoder circuit, signal quality indicator 154, as shown in claim 1 above.

Besharat teaches the energizing the receiver, detecting the presence of a carrier signal (quality detector 154 for detecting out-of-range, in-range, signal for controlling the power to receiver 104, quality indicator 154, Fig. 1, abstract, col. 6, lines 19-41; col. 12, lines 1-8; the presence of acceptable transmission, col. 7, lines 36-38).

Besharat teaches the de-energising the receiver if the carrier signal is not detected (the out-of-range detection, causing suspending of power supply to receiver 104, abstract; the absence of acceptable transmission, to generate out or range signal, col. 7, lines 38-42; col. 9, lines 34-36; col. 11, lines 18-20; the out-of-range detection and disable power using power control means 156 in col. 2, line 63 to col. 3, line 17). Besharat discloses the loss of signal is out-of-range (col. 9, lines 1-5 and col. 10, lines 16-19), as the carrier is not detected.

Besharat teaches the maintaining energisation of the receiver if the carrier signal is detected (the maintaining power supply to receiver 104 to enable in-range detection signal transmission). Besharat also teaches the in-range detection, to stop timer OOR 138, and to enable power supply to receiver 104 (col. 2, line 6 to col. 3, line 17).

Besharat does not clearly teach the detecting, decoding, the decodable signal, and the de-energizing the receiver if the signal is not decodable.

Ichikawa teaches the detecting, decoding, the decodable signal, and the de-energising the receiver if the signal is not decodable. Ichikawa teaches a battery saving circuit of a portable radio communication apparatus (abstract, col. 1, lines 6-8). Ichikawa teaches the decoding of the preamble code, if preamble code is not detected, disconnecting the power to the receiver (abstract). Ichikawa teaches the maintaining of the power supply to the receiver after the preamble code is detected (abstract; counted error in col. 5, lines 24-34). Ichikawa shows the preamble signal in Fig. 1A, the decoder 4 in Fig. 2, 3, and the power controller 7 in Fig. 3.

Ichikawa considers a reliable battery saving (col. 1, lines 25-27) to improving the battery saving efficiency (col. 1, lines 49-52). By including Ichikawa's technique to Besharat above, with the efficient battery power saving, the system could be upgraded of having a more reliable battery power supply by efficient battery power saving from Ichikawa. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Besharat and to include Ichikawa's efficient battery power saving with preamble decoding, such that the system could be efficient on saving the battery power.

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Besharat and Ichikawa do not clearly teach the signal strength indicator, the microprocessor controlling of the battery power for de-energizing receiver based on both the determination of the presence of the carrier and the quality false rate, for maintaining energizing for a first period of time until quality decision is made, the microprocessor to de-energize receiver when no carrier presence without quality determination, the metering unit and encoder coupled to transmitter, Gardner teaches the reducing of the power consumption of a mobile unit (title, col. 1, lines 6-10). Gardner teaches the processor for controlling the signal quality for the mobile unit based on the bit error rate BER quality and presence of the carrier from RSSI indicating for maintaining energizing (as shown in col. 3, line 64 to col. 4, line 14; col. 11, line 65 to col. 12, line 7; col. 12, lines 35-53). Gardner teaches the Ph-quality indication (col. 9, lines 40-53), the idle timer and wake timer (col. 13, lines 20-28). Gardner teaches the processor for controlling of the periodically deactivating receiver for a predetermined period for conserving battery power (col. 14, lines 46-67), the quality threshold (col. 14, lines 26-38), therefore, to deactivate receiver when weighted RSSI falls (col. 12, lines 1-7). Gardner teaches the transmitter of the mobile unit for communicating with base station (above), and encoding MAC layer protocol information (col. 8, line 65 to col. 9, line 18). Gardner teaches the improved power supply control without sacrificing bandwidth with efficiency (col. 3, lines 31-67), such that the system can efficiently controlling the battery power. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Besharat and to include Gardner's battery power controlling based on the RSSI and quality indicator BER, and time period for de-energizing battery power, such that the system could efficiently controlling the battery power.

Regarding **claim 9**, Gardner has taught above processor is operable to energize receiver for a first period time if carrier is present, based on the signal quality BER quality and presence of the carrier from RSSI indicating for maintaining energizing (as shown in col. 3, line 64 to col. 4, line 14; col. 11, line 65 to col. 12, line 7; col. 12, lines 35-53, the idle timer and wake timer, col. 13, lines 20-28). Gardner teaches the processor for controlling of the periodically deactivating receiver for a predetermined period for conserving battery power based on the quality threshold (col. 14, lines 46-67), for the maintaining energized state until determination of whether the signal quality is acceptable.

Regarding **claim 10**, Ichikawa above teaches the de-energizing receiver if carrier is not present in code without performing quality determination (as shown in abstract, the disconnecting power supply from receiver, when the preamble code is not detected during assigned time period).

Regarding **claim 11**, Gardner has taught above the metering circuit for RSSI and quality indicator. Gardner teaches the encoder (encoding MAC layer protocol), radio transmitter, of the mobile unit for communicating with base station (above), using the encoded MAC protocol information (col. 8, line 65 to col. 9, line 18).

Conclusion

3. Applicant's arguments with respect to claims 1-5, 8-11 have been considered but are moot in view of the new ground(s) of rejection.
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (703)-305-4385.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Charles Chow C.C.

December 8, 2003.



QUOCHIEN B. VUONG
PRIMARY EXAMINER